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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/926,730	12/10/2001	Yasuji Hiramatsu	P21047	1751

7055 7590 05/06/2003

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RESTON, VA 20191

EXAMINER

KACKAR, RAM N

ART UNIT	PAPER NUMBER
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1763

DATE MAILED: 05/06/2003

9

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/926,730

Applicant(s)

HIRAMATSU ET AL.

Examiner

Ram N Kackar

Art Unit

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 04 April 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 19-33 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 19-33 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 10 December 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 6.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 19-21 and 23 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa Masakazu (JP 11-040330) in view of Fukui Kiyoshi (JP 11-251040).

Furukawa Masakazu discloses a ceramic heater with a substrate made of carbide or nitride ceramic (Abstract) with a thickness of 0.5-5 mm (paragraph 0012) and a resistance heating body (Drawing 1) formed of a plurality of circuits (Drawing 1) on a face of the substrate opposite to the heating face (Drawing 2).

Furukawa Masakazu stresses the importance of temperature uniformity (Paragraph 14 and 25) but does not expressly disclose the scattering of thickness of the resistance heating body (which directly controls resistance and temperature) to be less than 50%.

Fukui Kiyoshi discloses a similar ceramic heater and discloses resistance body thickness dispersion less than 10% (Abstract).

Therefore it would have been obvious for one of ordinary skill in the art at the time invention was made to keep the thickness dispersion as small as possible so as to have uniform temperature at the heating face.

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3. Claim 22 is rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa Masakazu (JP 11-040330) in view of Fukui Kiyoshi (JP 11-251040) as applied to claim 1 and further in view of Arami et al (US 5591269).

Furukawa Masakazu does not disclose the resistance heating body formed on the insulating layer.

Arami et al disclose resistance-heating body formed on an insulating layer (Abstract).

Therefore, it would have been obvious for one of ordinary skill in the art at the time invention was made to provide heating resistance body on top of insulating layer so as not to have short circuiting, specially at high temperature when the resistance of the ceramic base gets low.

4. Claims 24-26, 28-31 and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa Masakazu (JP 11-040330) in view of Fukui Kiyoshi (JP 11-251040) and further in view of Kawada et al (JP 07307377).

Regarding claims 24-26 and 28, Furukawa Masakazu and Fukui Kiyoshi disclose all the limitations of these claims as stated in paragraph (2) above, except the surface roughness of the resistive heating body is not disclosed to be 0.05-100 μ m.

Kawada et al disclose the surface roughness of a heating layer on a ceramic heater being greater than 5 μ m (Abstract).

Regarding claims 29-31 and 33 as in claims 24-26 and 28, Furukawa Masakazu and Fukui Kiyoshi disclose all the limitations except they do not explicitly disclose that the surface roughness of the heating body is less than 50% of its average thickness.

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However, Furukawa Masakazu discloses average thickness of the resistance body to be 1-20 μm (Paragraph 0014) and with a 50% maximum, the roughness may be 0.5-10 μm . This falls within acceptable disclosed level of roughness in the claim as well as in Kawada et al.

Therefore, it would have been obvious for one of ordinary skill in the art at the time invention was made to have the surface of the heating resistor body rough so that it may have good bonding with the base and cool quickly after the heating is turned off.

5. Claims 27 and 32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Furukawa Masakazu (JP 11-040330) in view of Fukui Kiyoshi (JP 11-251040) and Kawada et al as applied to claims 24 and 29 and further in view of Arami et al (US 5591269).

Furukawa Masakazu does not disclose the resistance heating body formed on the insulating layer.

Arami et al disclose resistance-heating body formed on an insulating layer (Abstract).

Therefore it would have been obvious for one of ordinary skill in the art at the time invention was made to provide heating resistance body on top of insulating layer so as not have short circuiting a specially at high temperature when the resistance of the ceramic base gets low.

Response to Amendment

Applicant's arguments filed 4/4/2003 have been fully considered but they are not persuasive.

Applicant argues about the advantages of the invention compared to the disclosed art but does not disclose any claimed features which distinguish over prior art.

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Applicant argues that Kiyoshi is concerned with the inner layer and therefore there is no motivation or suggestion to combine with Masakazu.

The examiner disagrees. The scattering of thickness affects the resistance and the temperature uniformity, wherever the resistive heating layer may be.

Regarding surface roughness, Kawada discloses the motivation to combine it with Masakazu as originating from the fact that roughness is helpful for good binding (Col 1 line 44 to Col 2 line 10).

The applicant argues that rejection based upon Arami regarding insulating layer to prevent shorting, is based on improper hindsight.

In response to applicant's argument that the examiner's conclusion of obviousness is based upon improper hindsight reasoning, it must be recognized that any judgment on obviousness is in a sense necessarily a reconstruction based upon hindsight reasoning. But so long as it takes into account only knowledge which was within the level of ordinary skill at the time the claimed invention was made, and does not include knowledge gleaned only from the applicant's disclosure, such a reconstruction is proper. See *In re McLaughlin*, 443 F.2d 1392, 170 USPQ 209 (CCPA 1971). In this case it is well known that an insulation layer is helpful in preventing short-circuiting.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

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A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Ram N Kackar whose telephone number is 703 305 3996. The examiner can normally be reached on M-F 8:00 A.M to 5:P.M.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Gregory Mills can be reached on 703 308 1633. The fax phone numbers for the organization where this application or proceeding is assigned are 703 872 9310 for regular communications and 703 872 9311 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is 703 308 0661.

RK
May 1, 2003


SHRIVE P. BECK
SUPERVISORY PATENT EXAMINER
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